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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/490,631	01/24/2000	Yutaka Usami	00037/LH	7420
1933	7590	11/02/2004	EXAMINER	
FRISHAUF, HOLTZ, GOODMAN & CHICK, PC			DAY, HERNG DER	
767 THIRD AVENUE			ART UNIT	
25TH FLOOR			PAPER NUMBER	
NEW YORK, NY 10017-2023			2128	

DATE MAILED: 11/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

1229

Office Action Summary

Application No.

09/490,631

Applicant(s)

USAMI ET AL.

Examiner

Herng-der Day

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 July 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 25-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 25-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. This communication is in response to Applicants' Amendment ("Amendment") to Office Action dated January 20, 2004, re-submitted July 28, 2004.

1-1. Claims 1-24 have been cancelled. Claims 25-30 have been added. Claims 25-30 are pending.

1-2. Claims 25-30 have been examined and rejected.

Drawings

2. The drawings are objected to for the following reasons. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application.

2-1. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).

2-2. Capacitor C1, as shown in FIG. 9, has been disappeared in FIG. 10. However, FIG. 10 is the equivalent cell circuit diagram of FIG. 9 as described in lines 13-15 of page 16. Applicants argue, "in Fig. 9 reference C1 implies the parasitic capacitance of diode D1. In the equivalent circuit shown in Fig. 10, the parasitic capacitance C1 of the diode D1 does not need to be considered" (page 10, paragraph 2, Amendment) which has not been disclosed in the original specification. Appropriate correction is required.

2-3. In the right-most column of Figure 17, it appears that array "DAT" should be array "DTA" because only DTA array has been disclosed in the specification.

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3. The proposed drawing corrections to FIG. 15 and FIG. 16 and their formal drawings received July 28, 2004, are acceptable. The objection to the drawings of FIG. 15 and FIG. 16 has been withdrawn.

Specification

4. The objections to the specification have been withdrawn.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 25-30 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention.

6-1. Newly added claims 25-30 recite the limitation "particle models" in each of the claims. However, the limitation "particle models" does not appear to have support in the original disclosure.

7. Claims 25-30 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

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7-1. For example, independent claim 25 recites the limitations “performing transfers ... ; repeating the transfers until ... converge”. Since the number of repeating loops depends upon convergence as claimed, the number of particles provided by any constant current source, for example, at any iteration is a function of the number of repeating loops which is unknown until it is converged. Therefore, without undue experimentation, it is unclear for one skilled in the art how to make and/or use the invention.

7-2. For example, independent claim 27 recites the limitations “perform transfers ... ; repeat the transfers until ... converge”. Since the number of repeating loops depends upon convergence as claimed, the number of particles provided by any constant current source, for example, at any iteration is a function of the number of repeating loops which is unknown until it is converged. Therefore, without undue experimentation, it is unclear for one skilled in the art how to make and/or use the invention.

7-3. For example, independent claim 29 recites the limitations “performing transfers ... ; repeating the transfers until ... converge”. Since the number of repeating loops depends upon convergence as claimed, the number of particles provided by any constant current source, for example, at any iteration is a function of the number of repeating loops which is unknown until it is converged. Therefore, without undue experimentation, it is unclear for one skilled in the art how to make and/or use the invention.

7-4. Claims not specifically rejected above are rejected as being dependent on a rejected claim.

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Claim Interpretation

8. Independent claims 25, 27, and 29 recite the limitation “repeat(ing) the transfers until ... converge” in each claim. However, it is unclear for one skilled in the art how to determine the number of particles provided by any constant current source, for example, at any iteration because it depends upon the number of repeating loops which is unknown until it is converged as detailed in sections 7-1 to 7-3 above. For the purpose of claim examination with the broadest reasonable interpretation, the Examiner will presume that all the transfers will converge in one repeating loop.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 25-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Alvarado et al., “General Purpose Symbolic Simulation Tools for Electric Networks” IEEE Power Industry Computer Application Conference, May 1987.

10-1. Regarding claim 25, Alvarado et al. disclose an electric network simulating method comprising:

defining electric functions of a plurality of circuit elements as a plurality of element cells; defining intersections of wiring lines at which at least three circuit elements are connected as intersection cells; defining a wiring line in which the plurality of element cells are connected as a

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pipe; defining a wiring line in which the element cells and an intersection cell are connected as a pipe; defining a wiring line in which the intersection cells are connected as a pipe (Rule-based and object-oriented symbolic manipulations, pages 692-693, III);

setting a rule of transfer of particle models between a plurality of pipes connected to the element cells and a rule of transfer of particle models between a plurality of pipes connected to the intersection cells (rules, page 690);

performing transfers of the particle models between the plurality of pipes connected to the element cells based on the rule set with respect to the plurality of element cells, and performing transfers of the particle models between the plurality of pipes connected to the intersection cells based on the rule set with respect to the intersection cells (direct modeling method, pages 693-694, IV);

repeating the transfers until variation in number of particle models and variation in quantity of movement of the particle models, in the plurality of pipes, converge; and determining the number of particle models and the quantity of movement of the particle models in the plurality of pipes (for example, solve the problem for 1000 time steps, page 695, VI).

10-2. Regarding claim 26, Alvarado et al. further disclose comprising acquiring voltages of the element cells with reference to the number of particle models in the pipes and acquiring currents of the element cells with reference to the quantity of movement of the particle models in the pipes (solve a variety of simulation problems, page 694, column 1).

10-3. Regarding claims 27-28, these apparatus claims include same method limitations as in claims 25-26 and are unpatentable using the same analysis of claims 25-26.

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10-4. Regarding claims 29-30, these medium claims include same method limitations as in claims 25-26 and are unpatentable using the same analysis of claims 25-26.

Applicants' Arguments

11. Applicants argue the following:

(1) "it is respectfully submitted that new claims 25-30 are in full compliance with the requirements of 35 USC 112" (page 11, paragraph 2, Amendment).

(2) "the method, apparatus and program code of the claimed present invention does not at all relate to the conventional method of simulating a circuit, whereby Ohm's law is simply used to form a circuit equation" (page 11, paragraph 4, Amendment).

Response to Arguments

12. Applicants' arguments have been fully considered.

12-1. Applicants' argument (1) is not persuasive. The new claims recite limitations which do not appear to have support in the original disclosure. Furthermore, without undue experimentation, it is unclear for one skilled in the art how to make and/or use the invention. Therefore, claims 25-30 are rejected under 35 U.S.C. 112, first paragraph, as detailed in sections 5 to 7-4 above.

12-2. Applicants' argument (2) is not persuasive. Although Applicants claim a particle model, Applicants manipulate the particles as just numerical numbers in the present application. None of the specific features of particles, for example, velocity or mass, has been disclosed and/or claimed. Furthermore, Ohm's law is explicitly used to form the equation of the transfer rule, for

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example, as described in line 17 of page 19. Therefore, those numerical equations and algorithms disclosed by Alvarado et al. for symbolic manipulations meet the claimed limitations of setting transfer rules and performing transfer of particles.

Conclusion

13. Applicants' amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicants are reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

14. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Herng-der Day whose telephone number is (571) 272-3777. The Examiner can normally be reached on 9:00 - 17:30.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Jean Homere can be reached on (571) 272-3780. The fax phone numbers for the organization where this application or proceeding is assigned is (703) 872-9306.

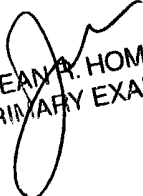
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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Herng-der Day *H.D.*
October 21, 2004


JEAN R. HOMERE
PRIMARY EXAMINER